

23 April 1952

MEMORANDUM FOR CHIEF, TRAINING DIVISION

SUBJECT: Former German Navy Radio Intelligence Organization
and Personalities, (B-Dienst)

1. Forwarded herewith for your information and retention are photostats of the following documents received by this Office from OP322Y1:

- a. IR 95443
Subject: Historical, Naval Radio Intelligence. (B-Dienst)
Date: 21 August 1951
- b. IR 94822
Subject: German Navy Radio Monitoring Service. (B-Dienst)
Date: 19 October 1951
- c. IR 94819
Subject: Germany Navy Radio Monitoring/Deciphering Service.
(B-Dienst)
Date: 20 October 1951
- d. IR 94821
Subject: German Navy Radio Monitoring Intelligence Service
Date: 24 October 1951
- v 107
e. Serial B-00015, ComNavForGer
Subject: Reports by Captain K. H. Bonatz on former German
Radio Intelligence Personnel.
Date: 26 February 1952
- v 0103
f. Serial 00510, U. S. NavAt London
Subject: Germany, Navy, Communications, Personnel formerly
Engaged in Intercept and Monitoring Activity.
Date: 27 March 1952

2. The above reports reflect current ComNavForGer operations viz-a-viz former SKL IV (B-Dienst) personnel.

J. S. HARPER
Captain, U. S. Navy
Chief, Office of Operations

Enclosures - 6
a/s

NND DECLASSIFIED
 Authority: 963816
 By: JM HANA, Date: 8/11

INFORMATION REPORT
 OFFICE OF NAVAL INTELLIGENCE

CLASSIFICATION
T-O-P S-E-C-R-E-T
 DATE OF INFORMATION
World War II
 FROM
COMNAVFORGER, APO 742
 SUBJECT
GERMANY. Historical. Naval Radio Intelligence. ("B-Dienst")

SERIAL NO.
31-TS-51
 DATE OF REPORT
21 August 1951
 EVALUATION
B-2
 REQUEST NO.

OPNAV-32F-96 REV. 10-50

SOURCE
MONITOR

BRIEF (FOR REPORTS OF MORE THAN ONE PAGE, ENTER CAREFUL SUMMARY)

Essay on "The History, Development, Organization and Success of the German Naval Intelligence Service ("B-Dienst") During the Period Between the Two World Wars", representing the first of a series of reports resulting from interrogations of and/or essays by former members of this service being submitted under the cover name of "MONITOR".

Ref: (a) DNI ltr serial 000214P32 of 3/13/51, and enclosure (1) thereto.

1. Pursuant to reference (a) there is submitted hereunder the first of a series of reports dealing with the German Naval Radio Intelligence Service ("Marine Funkaufklaerung"), which represents the work of source described in the Preparing Officer's comment. In connection with this project, the cover name of "MONITOR" will be used to identify all reports resulting from interrogations of and/or essays prepared by former members of this service.

"History, Development, Organization and Success Of The German "Marine-Funkaufklaerung" (Naval Radio Intelligence) During the Period Between the Two World Wars."

I. General Background.

(1) In the study herewith presented, treating the history, development, organization and success of German Naval Radio Intelligence between the two world wars, it may be appropriate to review briefly the historical development of this science. Turning back to ancient times it will be found that man attempted to conceal written messages from persons for whom they were not intended. Therefore one might say that codes are almost as old as the art of writing. Frequently in the days of yore, the meaning of writing and code were synonymous inasmuch as only a small circle actually was able to read, while the great mass of mankind was ignorant thereover. Within this "code" category were hieroglyphics and other picture-writings and, in a broad sense, the quippu of the Incas.

(2) With the progressive development of mankind and the increased spreading of knowledge in the art of writing, it became more and more necessary to screen and obscure

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secret messages by camouflaging the meaning of the written word-picture. Julius Caesar is reputed to have introduced the substitution of letters in plain text from which came the expression of 'doing Caesars' (simple, reciprocal and other codes). In reality, however, this primitive way of enciphering was much older. It is not the object of this study to examine that problem, but it may be said that even in the Middle Ages the art of enciphering had reached a respectable height. It is strange that in the ensuing centuries a decline in this art set in, apparently indicating that the importance of enciphering information was neglected or generally misunderstood.

(3) First in shipping, and later on in the organized navies of the world, interest turned to the practice of sending messages by use of flags. This semaphore means served primarily to facilitate giving commands to maneuvering columns of ships which frequently were quite long. With this system the individual flag or group of flags generally had a meaning of one or several sentences, but known only to persons who had been previously instructed therein, e.g., naval officers and signalmen. In this manner a code or secret signalling language was born as a sort of by-product. Consequently signal books were classified secret. In the days of the German Imperial Navy, a signal book was bound in lead-loaded covers; in case of emergency it had to be destroyed by burning or thrown overboard in deep water to avoid its falling into enemy hands. (The significance of this regulation will be referred to in an example given later).

(4) When at the beginning of the 20th Century, radiotelegraphy was introduced as a means of communication and command, the importance of transmitting range and therewith the attending danger of enemy interception, was unrecognized and fully misunderstood. Therefore plain language was broadly used in radio communication, or use was made of the non-secure secret signal book for concealing the text. Call signs in the signal book (Morse) were chiefly simple letter groups, whose meaning was easily recognized; e.g. 'NA' for NASSAU, 'OF' for OSTFRIESLAND, 'OL' for OLDENBURG, etc. With the introduction of this new means of communication, such an abundance of possibilities was offered - particularly in the technical field - that obviously there was no room left for other considerations. It must be termed a grave error of omission that the significance of radio telegraphy and the dangers attending its introduction, were not fully realized by any high level command. This reproach cannot be spared all those naval officers whose job it was, as Radio or Communications Officer, to use wireless telegraphy. It is precisely these officers who must be constantly aware of their high-level staff positions and who must realize the importance of the tasks they must execute, as well as to be conscious of the inherent dangers attending failure to exercise necessary precautions. The fact that this omission was not limited to the German Imperial Navy but obviously also applied to other navies, cannot detract from this reproach, but instead, merely generalize same.

(5) Therefore, along about 1907/08, when the German Navy began monitoring and intercepting Royal Navy radio traffic, it was not the intention to gain insight into the British cipher technique (either in the tactical or operational sector), but instead, was merely intended to gather intelligence on the development of radio techniques. This type of monitoring was carried out by the Radio Station Heligoland, the SMS ZIETEN (fishery

protection craft) and a trawler used for communications tests. The reports at that time showed that the German Navy was well satisfied with the results achieved, i.e., the technical knowledge gained. Other experience which should have been considered, such as the fact that the British used partly plain language both in the text and in the call address, was in no way evaluated.

(6) It seems that in other European Navies, the development took similar trends; i.e., little was done to protect own radio traffic and to monitor that of foreign navies for gaining tactical and operational knowledge. At least, this was the case with the British Navy which stood in the foreground of German naval interest. However, certain reports indicate that the "Deuxieme Bureau" of the Paris Naval Ministry had been working even before 1914 on the breaking of codes; more definite info on this could not be obtained. However, Germany's ally, Austria, was certainly an exception. The "Austro/Hungarian Monarchy", which then, of all European powers, had no own top organization for its Navy, but instead merely a section in the "Royal General Staff", i.e., War Ministry, was, as far as known, the only country that fully realized the significance and attending dangers of wireless telegraphy. Therefore this Monarchy systematically, albeit on a small scale, monitored and evaluated the radio traffic of foreign navies in the Mediterranean. This included monitoring Italian radio traffic (Austria's ally who was not trusted), as well as that of France and England. Details on the results achieved are no longer available. However, it is known that the German Naval Staff was informed of the results of Austria's radio monitoring activity, beginning in 1912, and continuing up to World War I. Therefore it is difficult to understand that this information, which certainly must have reached the cognizant authorities of the German Naval Staff, did not impell any appropriate measures, either regarding ciphering or radio intelligence. Consequently, the German Imperial Navy entered the first World War entirely unprepared in this field.

(7) The first monitoring of British naval radio traffic did not occur until some weeks after the outbreak of World War I, and then only perchance. After sweeping victories in the West, when the German armies came slowly to a halt and the fronts became stationary, many an army radio station became idle. One of them, attached to a cavalry unit at Roubaix in the area of the 4th Army, was 'killing time' by monitoring the traffic. One of the operators intercepted messages in English plain language and jotted them down. Upon examining same, British naval radio traffic was recognized, the message referred to positions and the relief of patrolboats in the eastern area of the Channel (Dover Patrol). The Radio Station of Main Headquarters was informed of the result as well as the German Naval Staff, and thereupon also started to monitor traffic. At the same time the Army asked for a naval officer to evaluate the observations made.

(8) It was this info that finally alarmed the Berlin Naval Staff. A naval officer was duly appointed and naval radio operators followed; finally the entire Radio-monitoring procedure was taken into its own hands. It was soon ascertained that not only radio traffic concerning the Dover Patrol, but also that of many other areas of the Royal Navy, was being sent out in plain language. Shortly thereafter, when the English turned to using simple ciphering methods, it was not difficult to read the contents of the signals. In the ensuing period, although enciphering methods became more difficult to break, the Royal Navy was still unable to ensure crypto-security. German Naval Radio Intelligence repeatedly succeeded in breaking the codes by means of the so-called routine messages which had been previously solved. The knowledge gained referred particularly to patrol

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units in the Channel area and along the British East Coast, and also to the disposition of cruisers in the northern North Sea and the Shetland/Iceland passages, as well as to convoy traffic. Monitoring was mainly carried out by the Radio Station Neumunster as the Intercept and Cryptographic station. ("Haupt B- und E- Stelle- 'B = Beobachtung, E = Entzifferung"). During the course of World War I other Intercept Stations ("B" and "E") were established in Bruges (German Marine Corps and Submarine Flotilla Flanders), in Libau (for naval warfare in the Baltic) and in Pola (German Submarine Flotilla Mediterranean). Units of the fleet were also employed in monitoring enemy radio traffic. However, more factors were involved than the mere monitoring of coded signals. Systematic and successful radio monitoring required specially trained and experienced personnel who were thoroughly familiar with the external characteristics of enemy radio traffic. The German Naval Staff repeatedly asserted that the reports from Radio Intelligence were of highest value. As special successes may be listed: the break-through of raiders which, with assistance of radio intelligence, evaded the position of the Xth British Cruiser Squadron; destruction of Norwegian convoys by the IVth Torpedoboat Half-Flotilla, i.e., by the cruisers "Brummer" and "Bremse" (assisted by a party of monitoring experts on board the cruisers). German submarines also took aboard specialists in this field; however, this practice soon had to be abandoned due to increasing losses and the impossibility of supplying enough expert personnel.

(9) German Radio Intelligence suffered a serious set-back after the captain of the raider "Moeve" revealed the results of the Naval Radio Intelligence Service in public talks. He stated that the German Naval Staff had continuously informed him of the location of the British Xth Cruiser Squadron, thus enabling him to evade its patrol lines unmolested. This info was sensationally published by the "Hamburger Fremdenblatt" and thus reached the British Intelligence Service and the Admiralty. The consequence was a fundamental change in the British naval ciphering system. Despite this setback, the German Naval Radio Intelligence Service still was able to supply valuable information. Deciphering of radio messages of the "Grand Fleet" was usually accomplished just about the time that the frequently changing cipher had lapsed, thus reaching the German Admiralty Staff and the High Seas Fleet Command too late to be used for tactical purposes. Nevertheless, the value of the intelligence obtained was always important.

(10) In addition to mentioning the valuable and accurate intelligence obtained, it is necessary also to relate failures which contributed to grave set-backs. While Naval Radio Intelligence needed the push given by the aforementioned cavalry unit to get started, German naval units on overseas stations - particularly the cruisers EMDEN and KARLSRUHE of the Cruiser Squadron - apparently on their own initiative, began monitoring and evaluating enemy radio traffic. Again an attempt was made to determine the distance of enemy forces by the intensity and volume of the signals received (it appears that these overseas units must have received instructions to that effect, totally disregarding the radiation of electromagnetic waves). A particular striking example of erroneous evaluation of radio monitoring led to the operation off the Cocos Islands by S.M.S. "Emden", and finally to her destruction by H.M.A.S. "Sidney". The German Commander Kleipamp wrote an essay on this incident which was published in the German Navy's "Dienstschriften". Whereas the British, as mentioned before, profited immediately from the German newspaper report covering the operation of the raider "Moeve", the Germans, strangely enough, kept on being

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extremely careless. Two events are particularly significant, illustrating a lack of foresight on Germany's part, and the resulting success of the enemy's radio intelligence (cited below).

(11) Soon after the outbreak of World War I, a radio officer aboard one of the units of the German High Seas Fleet succeeded in breaking an own staff cipher during a quiet watch, more out of amusement. His report on this subject, however, did not result in a change of the cipher system, but only in a reprimand to himself because he had searched into reports which were intended only for high level staffs. The cipher system was continued in use.

(12) Of far graver consequence, however, was the loss of the cruiser "Magdeburg" which ran aground in a fog near the Isle of Odensholm in the Gulf of Finland at the end of August 1941, and was lost. The cruiser's signal book was not destroyed by burning but dropped overboard aside the ship in comparatively shallow water. The Russians succeeded in salvaging the book and it was evaluated in Moscow and copied. One of the copies was handed to the British Admiralty. Because the ciphering of German naval radio traffic at that time was based on this signal book, the British could easily read the German radio traffic. Even if the British had no radio intelligence before the outbreak of war in 1914 - the simplicity of their own initial ciphers permits this conclusion - they were stimulated after acquiring this book and were immediately placed in a position to carry out a successfully operating radio intelligence. It was especially valuable for them to read the German "Z"-Station traffic, which was partly in plain language. "Z"-Station was a low powered radio station for communication from bridge to bridge during action. In this connection the German side was very careless because the range of such low powered stations, which served only tactical purposes, was assumed to be very limited. Therefore it was a great surprise when U-boats, returning from the Irish Sea, reported that they had followed the entire Z-Station traffic.

(13) In any case it must be mentioned that almost from the beginning of the war, "Room 40" of the British Admiralty, headquarters of British Radio Intelligence, was able to read German naval radio traffic and correspondingly to evaluate it. As an example it may be mentioned that during the Battle of Jutland the CinC of the British Fleet, Admiral Jellicoe, received the context of radio signals naming the German units taking part in the action with a delay of only half an hour or an hour, which fully explains the tactical attitude taken by the British Admiralty. In contrast thereto, it took the Germans a fortnight to decipher the British radio signals attending the Battle of Jutland.

(14) Here it must particularly be noted that until the reorganization of German naval ciphering system in 1917, the British succeeded in deciphering the context of every intercepted German radio signal. It is said that up to 2000 messages daily were monitored, read and evaluated. Even if this figure is somewhat exaggerated, the fact remains that the Germans operated for the first three years of World War I with open cards. A means of reconnaissance safer, quicker and cheaper than radio intelligence is therefore difficult to imagine. Frequently, however, the Germans knew that the British Admiralty had found out about the intended new German operations. The German side made random guesses and sincerely believed that British success was due to treachery and secret agents.

Neither the German High Seas Fleet nor the Naval War Staff hit upon the idea that it was German naval radio traffic which supplied the British their knowledge - and this in spite of the fact that Germany too was working on radio intelligence! However, it should be pointed out that on the German side there was no close liaison which is so necessary between a high level operational staff and the main Radio Intercept Station. (Radio Neumunster, the main station, was located at a great distance from the Naval War Staff and was operating almost independently).

II. Period Between The Two World Wars.

(A) General remarks:

(1) The 1918 Armistice and revolution put an end to German Radio Intelligence. All work concerning monitoring, deciphering and evaluation was halted. When finally in 1920 a new German Navy, the "Reichsmarine" was formed, attention was again given to Radio Intelligence. Naturally, the budget of the small German Navy was a modest one; however, Radio Intelligence needed comparatively little money and owing to the experience acquired during World War I there was good reason to expect valuable results. Therefore this service was resurrected in 1920 and operated, although at first on a very modest basis. Comparatively favourable conditions existed for the mere monitoring and intercepting of traffic as the numerous Coastal Radio Stations which had been set up were not very busy because of the small number of operating fleet units. Much worse, however, was the situation at the head of the organization because the so-called "Main Intercept Station" had only three deciphering experts, two of them with sufficient knowledge and experience. An officer to head the branch was not officially appointed until 1922 and even then his job was merely collateral duty. Soon after the service began to function again it was handicapped because the thread of continuous deciphering since 1918 had been broken, even though the opponents had changed to sending their radio signals in plain language. (Note: Should the development of the Naval Radio Intelligence during World War II be mentioned occasionally in the following paragraphs, it is done so merely to maintain continuity).

(B) Organization:

(a) The Central Office:

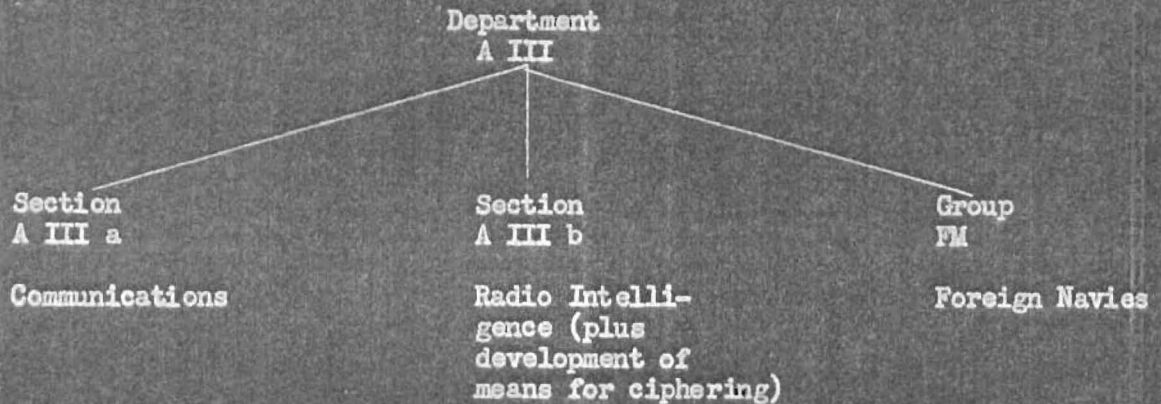
(1) The further development of the German Radio Intelligence Service during the years 1920 to 1939 was characterized by the lack of funds provided in the budget. It also proved to be very disadvantageous that the naval officer in the Admiralty who was responsible for Radio Communications (organization, tactical use of the radio equipment, means of ciphering), had simultaneously to attend to Radio Intelligence in a sort of a sub-office (collateral duty). Examining this organization, it was easy to imagine how little time could be spared for Radio Intelligence. From 1922 onward the Chief of Naval Communications had a young naval officer assisting him in this branch. This condition, which was aggravated by a lack of support from higher levels, endured until autumn 1929. Then, for the first time, a naval officer was appointed as official head of the Main Intercept Station. However, to offset this improvement, the entire Intercept Station staff of ten, was taken out of the framework of the Navy Department and incorporated in the Torpedo and Mining Inspectorate at Kiel. The reason given was the saving of the additional

allowance granted for Berlin (attached to the Intercept Station was also a section for "Development of means for Ciphering", which was supposed to benefit from success and knowledge of Radio Intelligence).

(2) By moving to Kiel, German Radio Intelligence was deprived of the important factor of direct contact with the Navy High Command; with other similar establishments (Ministry of Armed Forces, Army High Command, etc.), and lost connection with other sources of intelligence which were indispensable for its efficient functioning. The entire communications branch was treated like a stepchild in the small "Reichsmarine". This fact was illustrated by the lack of proper inspection of communications, the duties of which were the responsibility of the Torpedo and Mining Inspectorate, which did not even have the word "communications" in its title. Even worse was the lack of recognition and appreciation of Radio Intelligence within the Navy Communications branch itself. The very fact that Radio Intelligence was incorporated into Naval Communications is proof of the regrettable lack of understanding and insight into the peculiarities of Radio Intelligence which has only one thing in common with communications, e.g. the operator's occupation beside a radio set with which he tunes in and monitors Morse signals of the enemy. In any case, the normal receiver for Radio Intelligence should differ in its technical possibilities from a set which is used for radio communications. Whereas the latter must provide for precise tuning in of own frequencies, the former has the additional task of searching for new frequencies and radio stations by means of broad tuning. However, it must be able at any time to change from broad tuning to sharp reception to allow an undisturbed reception of stations newly located or already known.

(3) It is obvious that Radio Intelligence can inspire and favorably influence the composition and application of own ciphering means. It is this fact that makes it most advantageous to establish close liaison between this section of Radio Communications and Radio Intelligence. However, it should not be accomplished in such a manner as to disturb and reduce the efficiency and mission of Radio Intelligence. It should always be borne in mind that Radio Intelligence has the task of gathering information on the enemy by monitoring, deciphering and evaluating his radio communication services. Therefore, one must strive to reduce the housekeeping duties of the personnel working in this branch and find possibilities for them to think about and solve the problems in hand. It is erroneous to burden them with tasks which distract them from their primary duties and mission. In the final paragraphs of this essay some space will be devoted to the problem of the most desirable organization.

(4) After three or four years of remaining in "exile", the Main Intercept Station was returned to Berlin to the Navy High Command and, for the first time, as an independent department. At the same time a second naval officer was appointed as evaluator in order to ease the task of the head of the department who had to direct his main effort to own means of ciphering. In 1934 the top organization of Naval Radio Intelligence Main Intercept or "B" Station) numbered about 20 personnel, two of whom were naval officers and two leading deciphering officials. The organization of the Department A III of the Navy High Command, the so-called Naval Communications Division, was as follows:



(5) Group "Foreign Navies" was comprised of three sections which were supplied with all incoming info concerning foreign navies - from the Abwehr, attaches, press, and Radio Intelligence. This group not only began to compete with Radio Intelligence (Section A III b) (a fact which normally should have been a good thing as an incentive) but even gained ascendancy over it; this was emphasized by the fact that the head of Department A III had formerly headed up the "Foreign Navies Group" and thus had a tendency to overrate the significance of information originating from sources other than Radio Intelligence (Section A III b). Furthermore, the head of Section A III a was senior in rank to the head of Section A III b (Radio Intelligence) and insisted upon this seniority. It was obvious that the head of Radio Intelligence (Section A III b) was squandering a lot of energy to overcome internal friction in fighting for and expanding his independence. Despite these internal quarrels, the years 1934/36 were decisive for the organization and development of the German Naval Radio Intelligence. As a first positive action, Radio Intelligence (Section A III b) transferred the branch "own means of ciphering" to Section A III a (Communications).

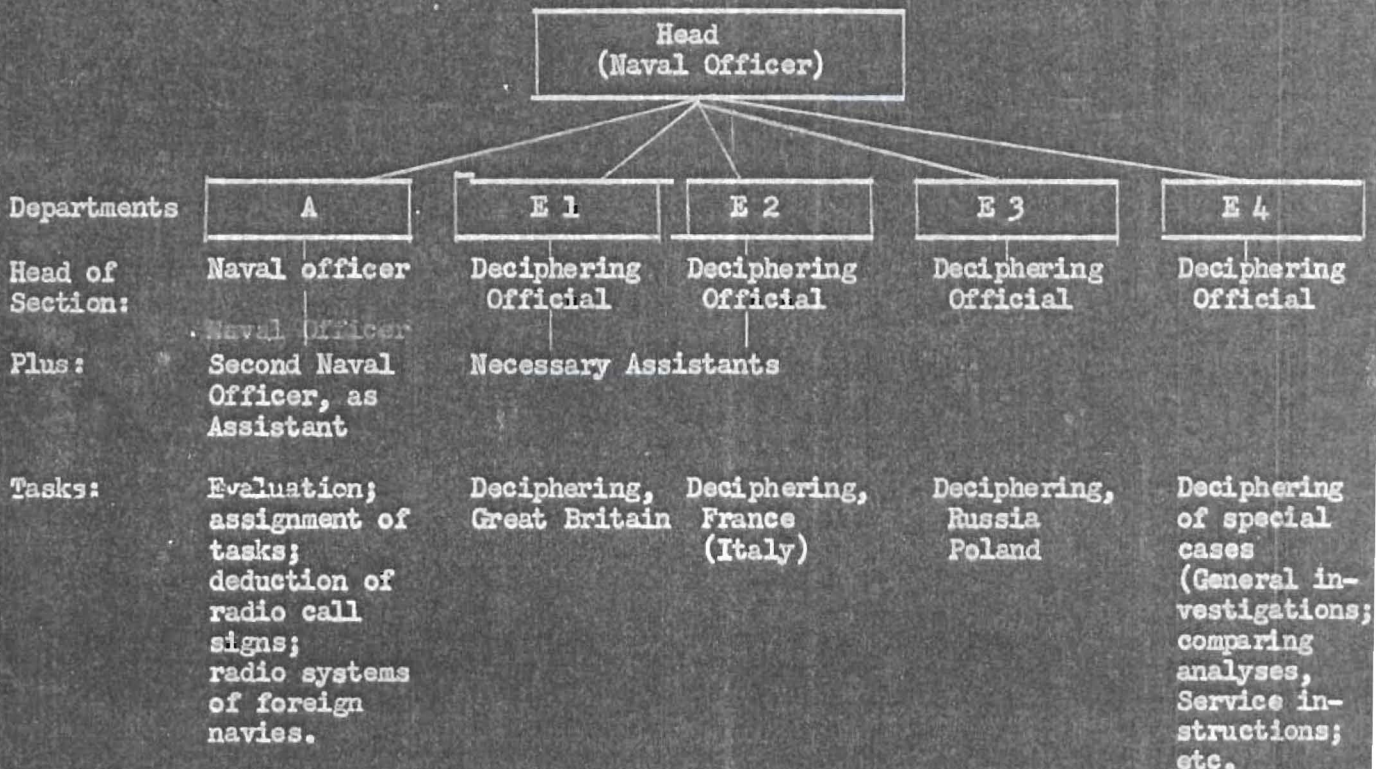
(6) Before going into the further development it should be mentioned that the head of the Main Intercept Station in Section A III b was, at the same time (since 1933) head of Group IV in the Intelligence Department ("Abwehr") of the Supreme Command Armed Forces (in those days called "Reichswehrministerium"). This fact was very important for close liaison with the various groups of intelligence and the opportunities resulting from this relationship; for instance, there was direct liaison with foreign countries and the German Naval attaches. This possibility for liaison continued although later on - for reasons difficult to explain - this personal union between Section A III b and Abwehr Group IV was severed. Until 1933 Group IV of the Abwehr was headed by a naval officer, but in 1933 when the head of Group IV left the Navy to establish and direct the so-called "Forschungsamt" of the Air Ministry, no new appointment to Group IV was made and the whole Group was subordinated to the head of the Main Intercept Station.

(7) The organizational build-up of Naval Radio Intelligence, based on plans agreed upon in 1934/36, was vitally influenced by experience acquired in the meantime. Naval radio traffic of Great Britain, France, Russia and Poland was monitored regularly. Deciphering showed an increasingly complicated system in radio traffic (change of frequency

radio call signs, functioning of traffic etc.) as well as in the ciphers used for codes and keys. Subsequent experience showed that for deciphering, former naval radio operators were best suited, who besides being more intelligent than the average, had not only already monitored foreign naval radio traffic, but were also familiar with the peculiarities of shipping, life aboard ship, and naval routine. All considerations pointed to the necessity of organizing the Radio Intelligence Branch in such a way as to cover the needs in peace time of every branch of the service so that in case of war only a very limited reinforcement of personnel would be required. As the choice and training of suitable personnel was difficult to solve and required considerable time, it was evident that at outbreak of war only auxiliary help could be recruited. Accordingly, Radio Intelligence should have a comparatively large number of personnel in its peace time organization. In part this reasoning was based on the demands imposed on German Radio Intelligence during the Spanish Civil War.

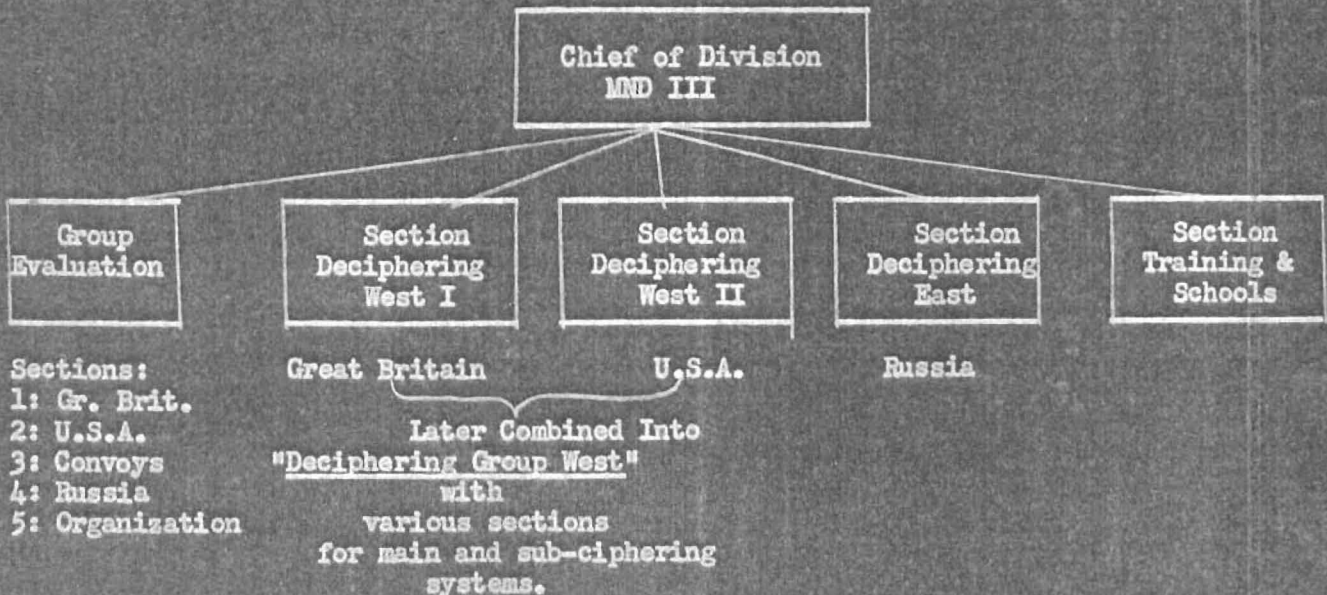
(8) It was calculated that the strength of the Main Intercept Station had to be about 110 men (the organization of the material collection stations will be shown later). While success was achieved as regards additional personnel, Radio Intelligence failed in its efforts to acquire complete independence from Naval Communications. The only achievement here was to enlarge Section A III b to "Group" status, thus gaining equal rank with the Group FM ("Foreign Navies").

The plan of the organization of the main interception station was:



(9) It was planned to bring the personnel up to full strength as quickly as possible. However, progress was slow because at the same time other branches of the Armed Forces, the Air Force in particular, were trying to build up similar organizations. This was most unfortunate and, regrettably, led to competition for personnel. As the choice of personnel had necessarily to be very carefully undertaken, the planned expansion took much more time than was originally expected and desirable. In fall 1936 the Main Intercept Station was staffed by no more than 30 persons and even in 1939, at outbreak of war, the planned number was far from being attained. However, during the war, Radio Intelligence finally reached its objective and employed over 1,000 persons in the Main Intercept Station ("Abteilung Funkaufklärung"). The Main Intercept Station was not affected by the organizational changes of the Navy High Command (OKM) and the Naval War Staff (Operations) apart from changing its name. Through creation of the Naval War Staff, the Navy Communications Division A III was split up; name Groups A III a and A III b now formed the "Second Division of the Naval War Staff (2./SKL) but retained the title of "Abteilung Marine Nachrichtendienst", while Group FM ("Foreign Navies") was expanded into a new "Division Foreign Navies" (Abteilung Fremde Marinen) and incorporated in the Naval War Staff as "Third Division" (3./SKL).

(10) Later changes occurring during the war meant nothing more than expansions: At the beginning of 1942 the existing 2nd Division of Naval War Staff (2./SKL) was elevated to a "Departmental Group" (Amtsgruppe) called "Chief of Naval Communications Services" (SKL Chef MND), composed of three divisions, the third of which (SKL Chef MND III) was the "Radio Intelligence Division". Further progress beyond this stage, with the idea of gaining complete independence for Radio Intelligence, could not be realized during World War II, in spite of all the successes achieved and promises made. In 1943 "Radio Intelligence Division" was organized according to the following plan:



(b) The Intercept Stations ("B"-Stations):

(1) After 1920 a large number of coastal naval radio stations, overburdened with work, were at the disposal of Radio Intelligence to monitor foreign naval radio traffic. These were at Borkum, Wilhelmshaven, Nordholz and List in the North Sea area, and at Falshoef, Neumuenster, Kiel, Arkona, Swinemuende and Pillau in the Baltic. However, there was no doubt that the geographical situation for first rate Intercept Service was unfavorable; this became very obvious when bearings had to be taken which very seldom provided a good enough basis. In the beginning the operators of these coastal stations were untrained for this special task because they all originated from Naval Communications. However, their continuous monitoring of foreign radio traffic soon made them competent specialists and furnished them sufficient insight into their special tasks. During the early years the basis for monitoring remained almost unchanged. With the growing of the fleet, however, the coastal radio stations Wilhelmshaven, Kiel and Swinemuende, as the main naval radio stations in the North Sea and the Baltic, were gradually taken away from the Intercept Service ("B-Dienst") and at times only one "Bereich" was designated to undertake the work. (A "Bereich" was the name given to the monitoring unit, where at times one operator with one or two receivers, sometimes with an additional D/F set, undertook the monitoring).

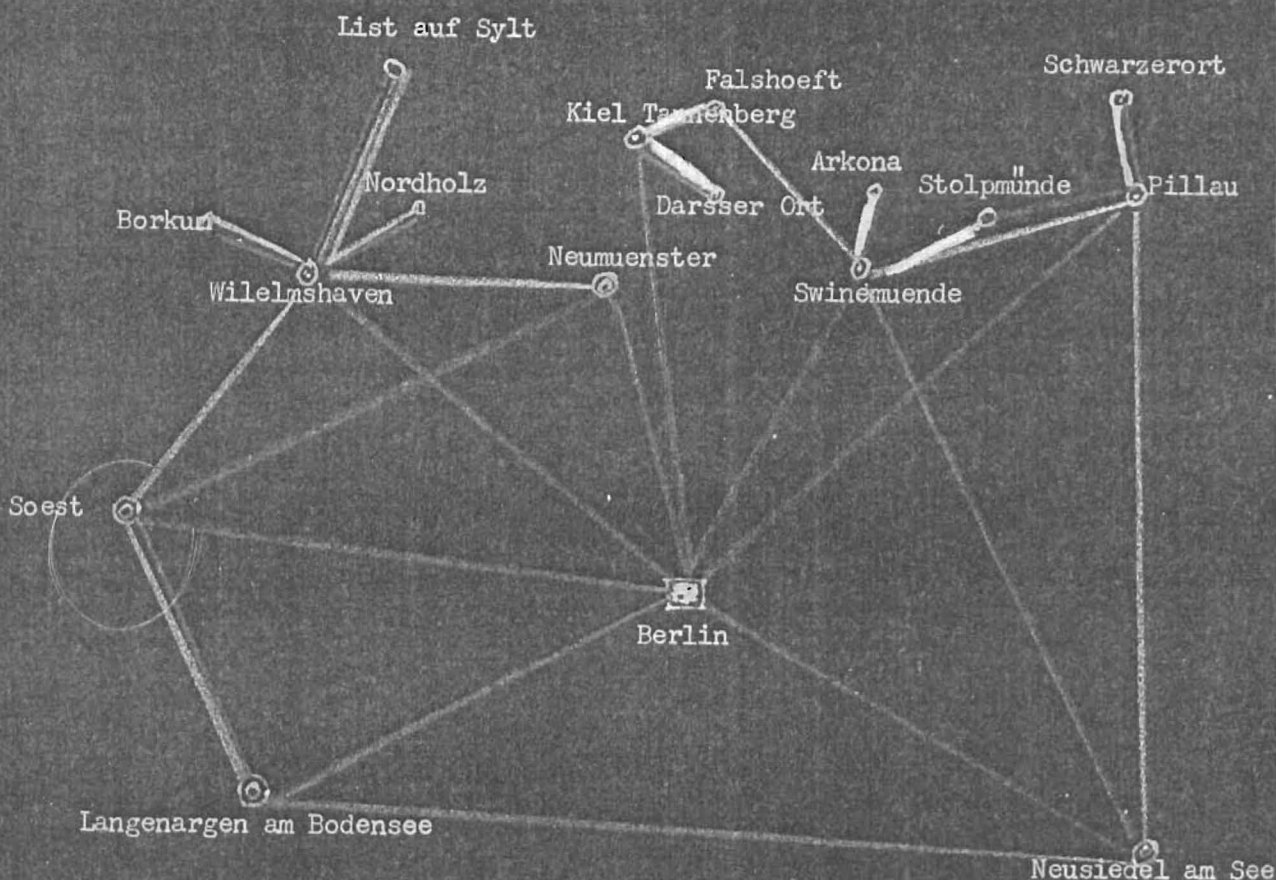
(2) Tasks were assigned to the various Intercept Stations by the "Main Intercept Station", based on their geographical locations as well as their size and equipment. Another determining factor was the quality of reception in the area which naturally was variable, particularly in the short wave bands. The long and medium wave bands also required careful consideration of the distance involved. Interest was focussed not only on normal routine radio traffic dealing with general directives, orders, reports and information, but especially on the so-called tactical radio traffic sent during exercises and manouvers, similar to that practiced by the German Fleet with its "Z-stations" for directing the line, task forces, or formations.

(3) These considerations led, in 1925, to the idea of establishing an Intercept Station as far to the southwest as possible, for monitoring radio traffic in the Mediterranean. As it was impossible to move into the then "demilitarized zone" of Germany and moreover, as it seemed necessary for reasons of camouflage to establish this station at a locality where the Army already had a garrison, the choice fell on Villingen in the Black Forest. Here a "Navy Radio Station South" was created and placed under command of a naval officer (MNO Sued, Navy Communications Officer South), and started operating with three "Bereiche". However, conditions for reception were not as favorable as originally conceived and, therefore, in the fall of 1926, "MNO Sued" was transferred to Landsberg/Lech. Later, after the connection with an Army garrison was no longer necessary and other considerations of camouflage could be dropped, "MNO Sued" moved on to a specially built and equipped station in Langenargen, Lake Constance, which was selected after having been carefully investigated for reception and bearing conditions.

(4) Similar considerations (affecting Russian naval radio traffic) for expanding the bearing bases towards the Gulf of Finland and the Black Sea radio traffic, resulted in establishing an Intercept Station in Neusiedel am See (after the Austrian Anschluss in 1938). In 1936 the existing net of Intercept Stations was adding the "MNO Mitte" (Navy Communications Officer "Middle") in Soest/Westfalia. Moreover, all existing stations

had been enlarged and improved insofar as the budget allowed. All possibilities within the German boundaries had now been exploited. The planned establishment of a 5th Regional Major Intercept Station in Berlin, or in its immediate vicinity, was never carried out. It was very important that all Intercept Stations be linked with the Main Intercept Station by teletype which initially existed only between the coastal area and Berlin by means of the general navy teletype net. Gradually a separate Radio Intelligence teletype net was put in from the coastal area to Berlin, including all the major Intercept Stations of inner Germany.

(5) At the outbreak of World War II the Intercept Net shaped up as follows:



| | | | |
|-------|--|---|--|
| ----- | Teletype Net for Radio Intelligence | ☐ | Head of Radio Intell. Berlin, Navy High Comd. |
| ----- | Bearing Net South | ⊙ | Main Intercept Station |
| ----- | Bearing Net West | ⊙ | Regional Major Intercept Station |
| ----- | Bearing Net East | ⊙ | Intercept Station |
| ----- | Bearing Region ("Bereich") Wilhelmshaven | | |
| ----- | " " " " Kiel | | |
| ----- | " " " " Swinemuende | | |
| ----- | " " " " Pillau | | |

(6) As shown in the plan, not only was there a teletype net but also a bearings net which could be operated via the telephone for any purpose by each of the inter-connected Intercept Stations; these were equipped with long-wave and, in part, with short wave D/F/sets. Primarily, the Bearing Net South, West and East served the purposes of the Main Intercept Stations whereas the Bearing Regions were at the disposal of the Regional Major Intercept Stations. The Intercept Stations, such as Borkum, List, etc. were subordinated to the Regional Major Intercept Stations as far as their tasks were concerned. The Main Bearing Station Nordholz was primarily used for navigation purposes on the international 800-meter wave band but also could be used for intercept purposes.

(7) In peace time there was practically no difference between the Main Intercept Stations and the Regional Intercept Stations. In case of war, however, there was a difference in so far as the so-called Regional Major Intercept Stations were to furnish the local senior naval commanders afloat directly with information originating from their areas. These various measures, introduced for somewhat theoretical reasons, were later dropped. In 1942 orders were issued which showed that there was no longer any connection between Naval Radio Intelligence and Naval Communications. In the Radio Intelligence Branch, the designations Navy Communications Officer (MNO) and Naval Radio Station (MFS) were dropped. The Intercept Stations were designated "Navy Bearing Stations" (MPS) and the Main and Regional Intercept Stations were redesignated "Navy Main Bearing Stations" (MPHS). As a new creation "Navy Bearing Divisions" were introduced (Marine Peilabteilungen) were to be used for all Main Bearing Stations which had a personnel strength exceeding that of a company.

(8) Prior to the war, the assignment of tasks was roughly as follows:

British Navy Radio Traffic:

| | |
|----------------------------------|---------------|
| Main Intercept Station | Neumuenster |
| Regional Major Intercept Station | Wilhelmshaven |
| " " " " | Kiel |
| " " " " | Swinemuende |

French Navy Radio Traffic:

| | |
|------------------------|---------------------|
| Main Intercept Station | "Middle" Soest |
| " " " " | "South" Langenargen |

Russian Navy Radio Traffic:

Main Intercept Station Neusiedel am See
Regional Intercept Station Pillau

Polish Navy Radio Traffic:

Regional Intercept Station Pillau
" " " Swinemunde

Italian Navy Radio Traffic:

Main Intercept Station "South" Langenargen

(9) Occasionally the Navy radio traffic of Holland (Wilhelmshaven) and Denmark (Kiel) was monitored to get some insight. However, the assignment of tasks was flexible and there was duplication on important intercept (B-Dienst) tasks. For instance, the Regional Major Intercept Station Swinemunde also monitored certain French short wave bands with one "Bereich" (team). It was strange that although Germany had geographically approached British Navy radio traffic in the Mediterranean by establishing the Main Intercept Station "South", the hoped for results in the "tactical" radio traffic of the Malta and Gibraltar forces were not achieved. This explains the fact that in general this Main Intercept Station had no tasks vis-a-vis Great Britain. Naturally the normal assignment of tasks was completely altered during the period when the various navies carried out manœuvres or large scale exercises. It was then that the Main Intercept Station Berlin issued special orders.

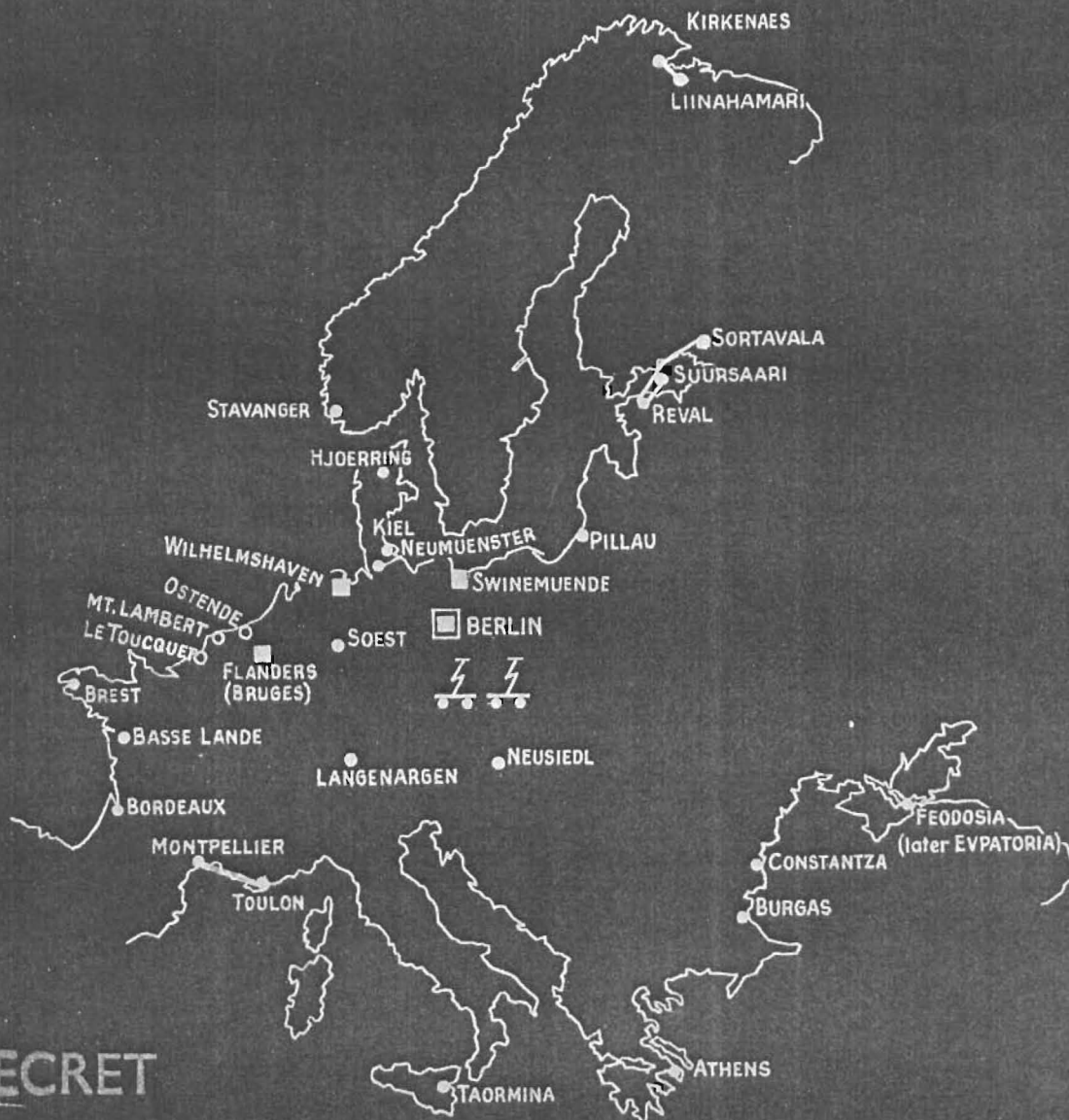
(10) Normally, no monitoring tasks were allotted to naval units afloat. However, ships going on long cruises at sea were exceptions. They received special monitoring orders, as, for instance, to monitor radio traffic of the U.S. or the Japanese Navy, and also Great Britain and France. Monitoring of the latter occasionally resulted in very good supplementation of the results acquired by the home stations, whereas monitoring of U.S. Navy traffic, which was made toward the end of the cruises, seldom rendered more than a superficial insight. Nevertheless this was good enough to form the basis for an information pamphlet entitled "Radio Communication and Traffic of the U.S." ("Funkwesen U.S.A.")

(11) The number of radio messages monitored daily or monthly by the individual Intercept Stations depended on their tasks and the amount of traffic carried over the wave length being guarded, which quite naturally, was subject to great variation. As an example reference is made to the Main Intercept Station "South" with three "Bereiche" (two French, one Italian) which, during the years 1929 to 1932, monitored on an average work day about 100 signals, that is, 2,500 a month. With the expansion and buildup of the monitoring net, the daily average of the incoming messages in Berlin increased to about 1,000.

(12) In order to complete the picture, there is shown on the following page the expanded Naval "B-Dienst" network which existed during World War II.

TOP SECRET

24. Der Vollständigkeit halber sei die Ausweitung des Marine-B-Netzes im 2. Weltkrieg bis an die Grenzen des deutschen Machtbereichs gegeben:



SECRET

- B-Leitstelle Berlin (später Eberswalde) (SKL Chef MND III)
- Marine-Peil-Abteilung
- Marine-Peil-Hauptstelle
- Marine-Peilstelle
- ⚡ Marine-Peil-Hauptstelle (mot.)
- Finnische B-Stelle (Nahtstelle)
- Italienische B-Stelle (Nahtstelle)

Der Übersichtlichkeit wegen sind nur die der Marine-Peil-Abteilung Flandern unterstellten Marine-Peilstellen aufgeführt.

(13) Naturally all Navy D/F Battalions and Main D/F Stations were directly linked by teletype with the Radio Intelligence Division Berlin, which had at its disposal a large pool of about 40 teletype sets. The necessary D/F lines (telephone lines) were switched accordingly. The most important messages, i.e., those needed for the current deciphering, had to be dispatched by teletype to the Radio Intelligence Division immediately after having been received; in this way the division received daily about 2,000 to 3,000 radio messages. Altogether, about 4,000 persons were engaged in Radio Intelligence during the war.

(c) Cooperation With Other German Radio Intelligence Offices:

(1) Of the various other German offices concerned with radio intelligence, or at least deciphering, the Navy cooperated with:

- 1) Armed Forces High Command
- 2) Army High Command
- 3) Foreign Office
- 4) Air Force High Command
- 5) Air Ministry - "Forschungsamt"

While organizations 1), 2) and 3) had existed for considerable time, the offices 4) and 5) were first created in 1933. The Foreign Office and "Forschungsamt" (Research Division) were chiefly concerned with deciphering diplomatic cipher systems, which was also of interest to the Armed Forces High Command. Army Radio Intelligence was in part, tied up with the Armed Forces High Command (through dual subordination of the head of the division; the top level organization was incorporated into the Abwehr Division (Abwehrabteilung, later on called "Amt Abwehr/Ausland"), whereas the radio reception stations were subordinated to the Army. The Navy cooperated with these offices insofar as deciphering and pure monitoring of radio traffic were concerned.

(2) As the German Navy Radio Intelligence Service dealt exclusively with matters of foreign navies and did not concern itself with diplomatic radio systems, the cooperation between Armed Forces High Command, Air Force High Command, Foreign Office and the "Forschungsamt" was limited to exchanging of experience gained in deciphering and the procedure of breaking codes. For example, the British 'Economical Code', which was being used by various British ministries and subordinate offices, was accordingly worked on by several German deciphering offices. An attempt by Navy Radio Intelligence to pin down one of these offices as the responsible office for this code (in order to save labor and personnel) was nullified by rivalry and distrust. In general, the exchange of experience with the OKW (Army) and the "Forschungsamt" was rather gratifying. However, it was less the case with the Foreign Office which endeavored to prevent any insight into diplomatic events. The relationship with the Air Force was not very close because this Service had not started working with radio intelligence until 1934/36 and, as it had scarcely any experts in the first stages, cooperation turned out to be rather one-sided from the Navy point of view. Cooperation in the field of pure monitoring/^{was} almost entirely limited to the exchange of radio messages picked up. Frequently it happened that radio messages received by Intercept Stations showed certain characteristics indicating that one of the

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other Radio Intelligence Services was responsible therefor. In addition the Navy, acting upon specific requests, cooperated in taking over special monitoring tasks. Finally, certain manoeuvres were monitored jointly, particularly if they were, or presumed to be connected with joint exercises.

(d) Cooperation With Other Countries:

(1) The unfavourable geographic situation of German Radio Intercept Stations in the heart of Europe, naturally inspired the wish to cooperate with other countries in the field of Radio Intelligence. The choice could only fall on countries which were regarded as friendly or which had the same interests in the area for monitoring foreign radio traffic. Therefore this sort of cooperation essentially depended on the political situation and varied accordingly. Moreover the psychological moment had to be considered, not only as to character and mentality of the people, officers and men of the country concerned, but particularly to the individual personalities with whom cooperation was desirable. Therefore it is easy to understand that the intentions of the chief of Radio Intelligence did not always coincide with those of the political trend, in particular if there was more to the job than a mere exchange of material. Cooperation therefore was possible - just as in the case of other German radio intelligence offices - both in the field of deciphering (i.e., not restricted), or in the field of exchange of material (but somewhat restricted). This cooperation was desirable with Finland, Sweden, Italy, Spain, Portugal, Hungary, Bulgaria, and Turkey.

(e) Finland:

(1) In 1934 an agreement with Finnish Radio Intelligence on unrestricted cooperation in Radio Intelligence was concluded. Finnish Radio Intelligence was unified - not separated according to service branches. Officers and special personnel gave a very good impression. As far as material was concerned, the Finns were somewhat limited and therefore they were given radio sets and funds by Germany. Cooperation was centered exclusively on radio traffic of the Russian Navy. Here Radio Intelligence could be supported and supplemented by visual observations. Cooperation functioned smoothly and to the benefit of both countries until Finland broke away from the German alliance.

(f) Sweden:

(1) Germany twice attempted to exchange material with the Swedish Navy, particularly as regards info on the Soviet Navy. The first attempt was made in 1932/33, the second in 1935. However, the cooperation hoped for by Germany never materialized because the responsible Swedish naval officer could not make up his mind. His principal assistant was very much in favour of cooperation.

(g) Italy:

(1) Since both Germany and Italy had totalitarian governments after 1933, it seemed logical that both countries would quickly arrive at agreements in the political field and, therefore, also in the Radio Intelligence field. However, this was not the case, especially in the case of German naval circles where an insurmountable distrust

prevalled. The cooperation that finally resulted was due only to a strict order by the Reich's political leader. Cooperation, which at first extended only to France, was later extended to Great Britain and then no longer subjected to any limitations. Despite this, a certain amount of distrust always remained. That this attitude was not unjustified was proved during the war (after Italy had entered same) when the Italian Navy sent the results of radio intelligence by so-called "Stella" messages, the ciphering of which did not prove to be safe against British methods of deciphering, as could be easily demonstrated through breaking of British radio messages. No opinion will be offered as to whether "Stella"-messages were actually deciphered by the British or whether the British actually had the cipher or code in their possession (captured or having been supplied??). In 1943, collaboration with Italy was halted when that country deserted the German side. A North-Italian attempt to resume cooperation in December 1943 was rejected.

(h) Spain:

(1) Up to this very day it is not known whether Spain engaged in radio intelligence on its own. At any rate, there was never any exchange of experience with the Spanish Navy in this sphere. However, occasionally opportunity was had to engage in radio intelligence in this country with own personnel, during important manoeuvres in the Mediterranean. This source was cut off at the beginning of the Spanish Revolution in 1935. However, after Franco's victory it was reopened. Also during World War II Germany was engaged in radio interception in Spain with own personnel and own material. All radio messages received were transmitted to Berlin; in no case were these messages worked on in Spain.

(i) Portugal:

(1) In 1935 Germany attempted to establish an Intercept and D/F station in Portugal which, as in Spain, was planned to be operated only by German personnel in times of important monitoring tasks. After the local prerequisites had been settled, all preparations had to be cancelled by high authority. There was never any connection with the Portuguese Navy concerning Radio Intelligence.

(j) Hungary, Bulgaria and Turkey:

(1) The head of German Radio Intelligence attempted repeatedly to effect collaboration with these countries or at least to establish an own Radio Intercept "Bereich" (team) within their boundaries. However, these plans never materialized because they found no understanding at the higher levels. Here an opportunity to commence radio monitoring against the Soviet Navy on a wide scale was lost.

(k) Training:

(1) There was no special training school for radio operators employed in radio monitoring. Personnel originated from the Navy Communications branch and were assigned to intercept stations where they became acquainted with their new duties. Although this procedure was generally satisfactory it was nevertheless evident that a careful training plan would have resulted in greater efficiency.

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(2) Before World War II, as already mentioned, the Main Intercept Station in Berlin was only supplied with limited new personnel for deciphering. Again it was impossible to instruct the new personnel in a special course. They were introduced to their new tasks by starting them off with deciphering simple systems. Prerequisites for their aptitude were: mental agility, a gift for analysis and synthesis, and knowledge of foreign languages. As previously mentioned, familiarity with life aboard ship and general naval routine proved of great help, whereas mathematical knowledge was of lesser value. The mathematician often lost himself in useless theoretical research.

(3) In addition to the practical training, the new deciphering students were also theoretically trained by lectures and exercises which were given by officers and deciphering officials of the Main Intercept Station in Berlin. The library of the Berlin Intercept Station naturally contained all books on the subject, such as Yardley, Figl, Stolbane etc. However, this sort of training was only a compromise, enforced by circumstances, and which had to be followed during the first years of World War II. It was not before 1942 that a six weeks' course in deciphering could be arranged at the Radio Intelligence Division. Through carrying out these courses in Berlin, the most up-to-date experience and the most able officers and deciphering experts as lecturers were at the disposal of Radio Intelligence. This kind of training proved best, not only because it enabled discovery of special talents suited for the various grades of difficulties, but also because it permitted the timely elimination of trainees who were not talented, thus avoiding a waste of money and effort. Naturally, a course of six weeks cannot produce a deciphering expert; however, a supply of trained assistants was urgently needed for the current work on new ciphers which were becoming more and more difficult. Deciphering by analysis still remained the main task of experienced experts who, from time to time were reinforced by new, particularly gifted personalities, coming from the bulk of decipherers.

(4) Officers assigned the task of evaluating Main Intercept Station, and Intercept (Stations) generally had no special training. Only newly appointed naval officers received once a year a short course of instruction in Berlin. Naval officers, whose appointments to Radio Intelligence might have been considered at a later date, very seldom took this course. This short annual instruction course was too superficial to produce any results; the time was even not adequate to determine whether one of the students was completely unsuited for the job.

(5) Appointments to Radio Intelligence therefore had to be made on the following principle: In addition to expert training as a radio officer, mental agility and suitability for higher staffs, strategical, operational and tactical knowledge constituted the prerequisites for selection. It was regrettable that after 1935 this rule could not always be applied, because the over-all expansion of the German Navy no longer allowed the exclusive assignment of naval officers to various positions in Radio Intelligence.

(1) Successes:

(1) Before citing successes achieved by German Radio Intelligence, it is apropos to refer briefly to the mission of Radio Intelligence. Radio Intelligence signifies the monitoring and evaluating of the radio traffic of another country or a service branch thereof, for the purpose of gaining intelligence. Naturally this procedure of gathering

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information must and can be realized in two ways, i.e., with and without the aid of cryptanalysis. Naturally any message is particularly valuable when completely deciphered. However, only in rare cases will cryptanalysis - the quality of which always is subject to change - be able to enable evaluation with such complete and favorable results. Frequently only partially deciphered radio messages are available due to impossibility of breaking the entire cipher system. It is then that the work of evaluation asserts its importance as it is this procedure which strives to compose a mosaic consisting of tiny fragments. Before the initial appointment of a naval officer as head of the Main Intercept Station in Berlin (1929), evaluation was undertaken only at Intercept Stations, without the aid of deciphering, whereas the Main Intercept Station in Berlin (in those days having no naval officer) supplied the higher commands with individual reports more or less completely deciphered but in no way evaluated. Thus it became necessary to appoint naval officers of highest calibre to positions of responsibility dealing with evaluation. By means of their own creative faculties, these officers were able to cope with this difficult and responsible task.

(2) The successes achieved in deciphering have already come to light through interrogation of the leading German experts so that here it will be sufficient merely to make brief mention thereof since it would be impossible to describe them precisely without documents and sources. It is important and characteristic to point out that German cryptanalysis did not have assistance from "bought" or captured codes. The success achieved was almost exclusively the product of the mental skill of the persons assigned to this work. If in some cases a code (which had been bought) was available, it was used mainly to check the correctness of own theory of method and analysis. During World War II it frequently happened that captured documents reached the Radio Intelligence Division, but they were almost useless for current deciphering either because the loss had become known to the enemy who immediately nullified it, or in case the code had been intended for future use, it never was put into effect. If therefore German cryptanalysis was successful, it owes no small measure of this success to the fact that it worked independently, always maintaining constant control over and critical examination of the analytic method.

(3) It is obvious that cryptanalysis requires the constant support of evaluation - that of the top organization as well as of the forward Intercept Stations. There must be a continuous flow of info between evaluation and deciphering offices. Deduction of call signs, routine groups, tactical messages, etc. are important hints for the deciphering, and vice-versa, deciphered messages assist the work of evaluation. Moreover, evaluation at the Intercept Station must be undertaken in close liaison with the operator at the receiver in order to make proper use of his individual observations. Experienced German monitoring operators were not only familiar with the peculiarities and characteristics of foreign radio traffic, but in addition they even recognized the "handwriting" of the individual foreign radio operators, at least those from the most important land and ship stations. How important this knowledge is may be drawn from an example taken from the French service regulations for radio monitoring, via. The French navy coastal radio station FUY (Beirut) was particularly important for communications between the Navy Radio Stations FUB (Paris), FUZ (Shanghai) and FNEO (Forces Navales Extreme Orient), in case conditions of radiation on the short wave band or other circumstances made direct communication impossible. Of all the operators of the Navy Radio Station Beirut in 1935 only one was interested enough to attempt direct communications whereas the others normally could not be bothered with trying. On the other hand the German operator at Landsberg/Lech had

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primarily to monitor the traffic very carefully, and attend to another task (overlapping of tasks because of shortage of personnel).

(4) The radio operator must take his task very seriously and listen in very carefully because it sometimes happened that the foreign operator slipped up somehow and thus revealed a vital bit of information or clew. Once, for example, the Germans succeeded in monitoring a ciphered radiogram which the receiving station was not able to decipher. After some time the receiver radioed back that the new cipher which now was valid was not yet available and therefore the radiogram could not be read. After some time the first radio station repeated the same radiogram, but in the old cipher having been used up to then. The interception of this serious blunder not only led to the knowledge of the intended alteration of the key, but allowed the deduction that only the ciphering and not the code was going to be changed and thus finally enabled the experts to break the cipher. Although in this case the consequences for the country concerned were not as serious as those in 1914 during the Battle of Tannenberg, when the German Army Radio Intelligence intercepted a similar blunder. At any rate, the change of the key did not affect German Radio Intelligence in the least.

(5) Normally the monitoring stations forwarded the evaluation results monthly to the Main Intercept Station in Berlin. Of course, important observations were an exception to this practice. Evaluation at the top level concentrated on periods of foreign naval manoeuvres, the insight into which was very valuable. Naturally, in addition, reports coming in from the Intercept Stations were evaluated and examined. As previously mentioned, the evaluation undertaken by the Intercept Stations, ("B-Stellen") was undertaken without aid of deciphering and was concerned primarily with the external picture of foreign navies. Nevertheless, valuable observations were made; for instance there was obtained a continuous picture of exercises and training practices in foreign navies, a comprehensive insight into the movements of foreign ships, an insight into the tactical composition of formations, an opportunity to copy various manoeuvres and exercises, such as firing practice, evolution of formations etc., and finally, all this permitted the compilation of experiences gained over a longer period, as for example "The Training Year in the French and Italian Navies".

(6) Naturally, the most important evaluation work was done in Berlin where all material from the Intercept Stations was at the disposal of the Main Intercept Station and which could be supported by deciphered messages. Intelligence from other sources, which was also available, served merely as an assisting component. Periods of exercises of foreign navies were closely observed, as they permitted conclusions on the state of training, strategic thinking, operational intentions, and tactical command. Moreover, they presented an opportunity to judge foreign military high level personalities, which info was in part card indexed. In the years up to outbreak of World War II, not one large-scale manoeuvre of the foreign navies being observed passed without being evaluated. In nearly every case special orders were issued to the Intercept Stations concerning special monitoring procedure, with the idea of covering radio traffic during the manoeuvre as completely as possible. Evaluation reports were forwarded to own interested high level staffs and CinC's. The author does not know a single case where this work seemed to have been futile. From the abundance of evaluations made, the following may be cited. The large-scale British manoeuvres in the Azores area (1935) revealed an excellent insight into the British manner of providing escort protection and their ideas about attacking a convoy, the command of task forces, etc. All this was made possible by deciphering results and evaluation aids.

(7) However, the state of deciphering messages did not permit an insight into the meaning of messages monitored during a French manoeuver in the Bay of Biscay along about the same time. Evaluation therefore could be based only on the external picture of radio traffic and on bearings. However, some traffic, referring to emergency aircraft signals, could be read correctly. Despite this, radio intelligence not only succeeded in giving a general description of the exercises but was able to explain the purpose and task of the manoeuver, its execution, showing the events on three charts. At the time, this work was highly appreciated and recognized as being particularly valuable by the operational division of the Naval War Staff. The accuracy of the combinations and the composed mosaic was scrutinized two years later when it was verified that Radio Intelligence had succeeded in breaking the cipher system used.

(8) In 1935 or 1936 the "CHI-Stelle" (Code Section) of the War Ministry (head of Radio Intelligence of the Armed Forces and simultaneously of the Army) requested joint monitoring of a combined manoeuver of all British Service branches which was to take place off the British East Coast. Monitoring of Royal Navy traffic showed that its participation in a landing operation was very limited, hence as the main forces engaged were Army, the Main Intercept Station was ordered to evaluate the radio traffic. However, the attempt by this Army "B"-station to obtain operational or tactical evaluation was negative because the British grid-system was not known. Obviously up to then no one had dared try to solve this system. Therefore the Navy tried it and luckily succeeded in breaking it, with the result that the operational and tactical events of the manoeuver could be reproduced accurately. (The author merely desires to emphasize that tenacity and the gift of feeling one's way into a problem can lead to success even in cases where auspices look rather grim at the beginning).

(9) From the Russian sector two examples may be cited. In 1935/36 the strength of the Red Baltic Fleet in number of units, in particular the number of submarines, was ascertained. (At that time the German Naval Attache in Moscow stated that it was hopeless to make such an attempt because of Russian camouflage). In 1938 apparently somewhat more important manoeuvres were held in the area around the entrance to the Gulf of Finland. The evaluation now clearly proved that these exercises too did not exceed the framework of tactical exercises in formations.

(10) Naturally, observations and supervision also extended to German manoeuvres and exercises on a large scale, making use of monitoring teams of the various "parties" engaged; this was for the purpose of scrutinizing safety of own means of deciphering and cipher systems. For instance, in the final critique of the 1936 fall maneuver, the commanding officer of cruiser "Emden" revealed that he had operated exclusively in accordance with the report given by his Radio Intelligence team and thereby had succeeded.

In addition to these evaluations of maneuvers and important individual reports forwarded continuously to the high level staffs, particularly to the Operations Division of the Naval War Staff, Radio Intelligence, after tedious work, produced service manuals on radio communications and systems in foreign navies. They served own Communications Branch as a means of comparison and supplied the Intercept Stations with the necessary foundation for their task. Moreover, Radio Intelligence had to draw up a compilation of tactical signals of the foreign navies with their German meanings which were used not only

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by the Intercept Stations, but also by the units afloat. Finally the Main Intercept Station in Berlin promulgated a list of tactical compositions and dispositions of foreign navies which was continuously supplemented.

(11) The successes of German Radio Intelligence during World War I are probably well known from captured documents. Therefore mention will be made of only one letter by CinC Submarines (Ser. No. GKdos 4750 A3a, 3.11.1942) the text of which is still in the author's possession; it runs:

"To: CinC. German Navy, Naval War Staff

Head of Navy Communications Division III (SKL Chef MND III). Up to present the CinC Submarines has made excellent use of the results of Radio Intelligence for the disposition of his submarines and in several cases has caught the convoys reported. One particularly successful case is the operation against convoy SC 107, 31 October 1942, where the timely report by Radio Intelligence on the convoy route made it possible to concentrate the disposition of the submarines to such an extent that a few hours after the first sighting, several boats made contact with the convoy. 16 ships of 94,000 GRT were sunk and 2 ships, 2 destroyers and 1 corvette torpedoed. In the ensuing pursuit of the convoy in dense fog, the reports of Radio Intelligence formed the basis of the employment of the boats and led to re-contacting the enemy. Through these reports Radio Intelligence Division contributed in great measure to the success achieved."

III. Concluding Remarks:

(1) This study would have been more thorough and more precise if documents had been available. Lacking this foundation the author has had to restrict himself to the positive facts he still recollects.

(2) Looking back at the growth and the results achieved by German Radio Intelligence, two facts are worthy of close examination, viz:

- (a) What is the value of radio intelligence in comparison with other branches of the German Navy also dealing in the collecting and evaluating of intelligence?
- (b) What is the most efficient organization of Navy Radio Intelligence?

Re (a): Here we must examine the department "Ausland-Abwehr" (Foreign Intelligence) of the OKW and the division "Foreign Navies" of the Naval War Staff. The department "Ausland-Abwehr" was an organization which merely tried to gather intelligence (reports from agents and attaches). These reports were, for the most part, forwarded without comment, leaving the value of reports by agents rather doubtful. The occasional source info "Reliable agent reports", cannot be accepted as proof, particularly as it frequently happened that the "reliable agents" worked for both sides. The Ausland-Abwehr supplied a large amount of information, some of it correct, some incorrect, and some of doubtful value. But it forwarded all these reports, even when it knew that the report was incorrect or mere nonsense. Particularly dangerous were those reports which appeared to be correct but which in fact were not.

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The division "Foreign Navies" (3/SKL) was really not an institution to collect intelligence - with the exception of press and radio news evaluation. It was supplied all intelligence information, that is, by the Ausland Abwehr and by Navy Radio Intelligence Division. Its task was to compose a picture of the different countries based on all information available. Unfortunately the Foreign Navies Division had a tendency to over-rate press information and reports from Ausland Abwehr vis-a-vis the reports supplied by Radio Intelligence, both prior to and during the war. This was the reason why operational and tactical reports on the enemy remained exclusively within the domain of Radio Intelligence which forwarded all information gathered immediately to the superior commands. The division "Foreign Navies" was always staffed with officers who had nothing whatever to do with Radio Intelligence and therefore naturally lacked every faculty for assessing it. This circumstance occasionally led to regrettable rivalry.

In contrast thereto Radio Intelligence gained its knowledge and experience right from the sources of the foreign navies' communications; this statement is not altered by the fact that it also had all other reports at its disposal (Ausland Abwehr, attaches, press, etc). It was the principle of this division that reports from other agencies (if suitable) could serve only as an occasional aid for deciphering, and that only intelligence gained solely from its own sources should be disseminated. The reports were always evaluated, i.e., factual report, report with probability of 75 to 99 per cent were evaluated as probably correct, and those with a probability of 50 to 74 per cent correctness were evaluated as possibly correct. Reports with less than 50 per cent probability (usually based entirely on deciphering) were forwarded to higher authorities only if the head of the division regarded it necessary for special reasons. Generally it may be said that Radio Intelligence encourages logical thinking and at the same time synthesis. However, care must be exercised not to get lost in vagaries. This steady self-control was typical of the structure and the effect of German Radio Intelligence. It is the very adherence to these principles that founded the reputation which Radio Intelligence enjoyed inside and outside the German Navy.

The author holds the view - and always did during his active service - that for reason of personnel economy, it would have been more advantageous to combine the two divisions of "Foreign Navies" and "Radio Intelligence". In this connection all officers should originate from Radio Intelligence so that they might be competent to appraise the overall intelligence situation.

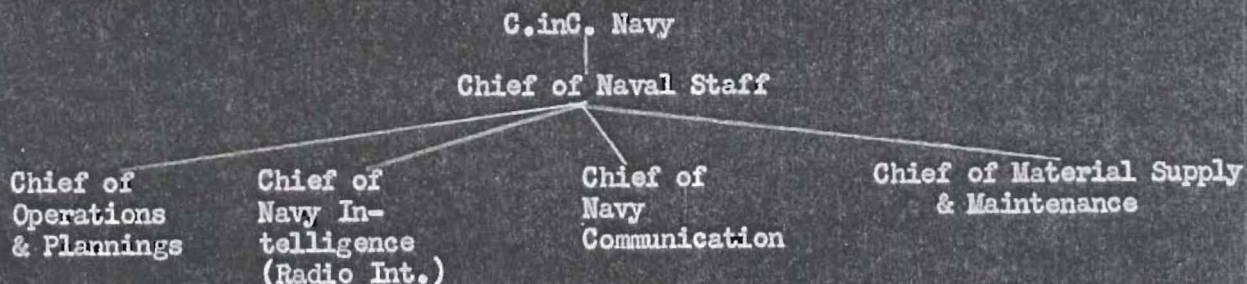
Re (b): After endless discussions the author was asked to agree to setting up a Central Radio Intelligence for the entire "Reich", i.e., a combination of all services (Ausland Abwehr, Army, Navy, Air Force High commands, "Forschungsamt", Foreign Office and so on) with the aim of saving personnel and duplication, and of avoiding rivalry. This department was to be independent and not attached to any ministry. This idea seems to have something attractive. However, when closely examined, it results that such a monster organization while theoretically looking quite well on paper, is extremely difficult to carry out in practice. The needs of the various services are too different and will diverge too much at their outposts, i.e. intercept stations in the army frontline, aboard ship, etc. Of course, the top organization could be a combination staffed with equal numbers from all services. But the appointment of an officer as head, however, should take into account the outposts and subdivisions.

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The author does not desire to go into further details for this would exceed the framework of this text. He desires only to give his opinion on the most useful and efficient integration of Radio Intelligence in the Navy organization, wherein one can easily assert that the "subdivision evaluation" - more or less altered - could also be taken over in a joint top organization of all services engaged in radio intelligence.

(3) Experience has taught, particularly in radio intelligence (evaluating as well as deciphering) that time must be available for intellectual work; frictions should be eliminated. The description of the historical growth of this significant source of intelligence has already touched upon the step-mother treatment accorded Radio Intelligence and also the fact that Radio Intelligence has practically nothing to do with Communications.

(4) Conclusions to be drawn therefrom are that Radio Intelligence must never lose close contact with high level commands, or with similar organizations and sources of information. Radio Intelligence should be included in the Naval High Command with special consideration given to its wide latitude of operation and maximum independence. The following plan is considered the best from the author's point of view:



(5) The Department "Chief of Navy Intelligence" to be sub-divided into a Division of "Foreign Navies" (evaluating division) and into one or several deciphering divisions.

The Chief of Navy Intelligence should be the ranking superior of all service personnel of Navy D/F Stations, etc. A subordination of these personnel under local commanders should be limited to general matters concerning the garrison, as only an expert officer is capable of applying correct judgement in this special branch. In this set-up the Chief of Naval Intelligence would be endowed with the right of direct inspection and visit to the outside organization. This measure, with all its resulting possibilities would exercise an encouraging effect upon all offices, which was badly missed in the times past.

(6) Naturally Radio Intelligence must be furnished with all modern facilities and means. In addition to well-devised receivers, D/F sets and aerial systems, machines must be used for deciphering to save personnel and time (for instance "Hollerith" machines) and, as daring as it may sound, one should also plan the construction of an electric device for deciphering. If radio intelligence is afforded the opportunity of free development and work, it will even today, despite all modern and new difficulties, produce positive results.

21 August 1951

2. Preparing Officer's Comment:

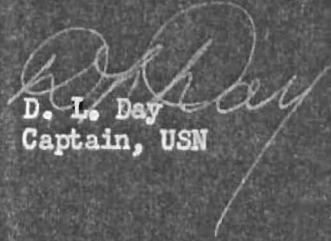
Source Info: Source of the foregoing study is Kapt. z. See Heinz BONATZ, now living in KREFELD, Stadtgarten 10 (West Germany). He was employed in the communications branch of the service during both world wars, and during the period 1942/44 he headed the entire "Funk-Beobachtungs- und Entzifferungsdienstes im Oberkommando der Kriegsmarine (SKL) (Radio Monitoring and Deciphering Service in OKM), Berlin. Source had no documentary material at his disposal and therefore relied solely upon his memory in drawing up his treatise.

Comment: As a whole, the essay in question seems to present a comprehensive and accurate picture of the development of radio monitoring ("B-Dienst") and deciphering ("E-Dienst") in the German Navy during the period between the two world wars. As this study was prepared by an experienced officer, it would seem that his experience in this field and the conclusions he has drawn may represent a valuable contribution to the future of own U.S. Naval Radio Intelligence projects.

Prepared:


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